

PATENT SPECIFICATION

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(54) PRODUCTION CONTROL SYSTEM

(71) I, EIICHI YAMADA, a citizen of Japan, of 6—19, 2-chome, Higashinakano, Nakano-ku, Tokyo, Japan, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a method of manufacturing a product.

In a conventional production control system, where a product is manufactured, a work plan is worked out on a desk in a control department and parts, job and shop are determined based on the work plan. The work plan is written on a Gantt chart or pert chart in which time is represented in an analog form, and the progress of the work plan is controlled. Where the work plan so made only in a specified control department is put into practice, a difficulty frequently occurs due to its insufficiency and modification of the original work plan becomes necessary. This is due primarily to the lack of mutual understanding between the personnel in the control department and on-the-spot workers, due to the stoppage of the progress of work caused by absence, accidents etc. to the workers, and due to a delay of the receipt of parts and so on.

It is accordingly an object of this invention to provide a method of manufacturing a product in which a work plan is worked out in a form to enhance a mutual understanding between the personnel in a control department and on the spot workers.

According to the invention there is provided a method of manufacturing a product comprising displaying an indication for starting simulation work to each of a plurality of work teams at respective working stations, supplying to a computer work data produced from each work team which has started a simulation work based on the indication, storing the work data from each work team in the computer, cumulatively adding the numerical data of all the stored work data developed in the same work team and re-storing the added data, preparing a

simulation work chart by printing out the added work data of the simulation works of all the work teams, providing a simulation work data tape representative of said simulation work, providing an output from a read out of said tape, comparing said output from the read out with input data supplied to the computer and producing an output resulting from said comparison, using the output produced from said comparison to determine the required extent of modification of said read-out output using said read-out output so modified to produce a practice, work chart based on the simulation work chart, and effecting working operations at said working stations in accordance with said practice work chart to produce said product.

This invention can be more fully understood from the following detailed description when taken in conjunction with the accompanying drawings in which:—

Figure 1 shows a flow chart of a production control system according to this invention;

Figure 2 is a plan view of a display keyboard;

Figure 3 is a display panel design of a display board;

Figure 4 is a partial view of a printed out simulation work chart; and

Figure 5 is a flow chart of a work data in the practice operation.

In Figure 1 a system of a simulation operation and practice operation is shown. In the simulation operation system, a display keyboard 11 has, for example, key switches 12 of 10 x 17 arranged in a matrix, as shown in Figure 2. A display board 13, as shown in Figure 3, including lamps flashed in response to the operation of the key switch is provided. The display board may be provided in a council-room of a control department or each work room.

Where a certain article is manufactured, a process is undergone which may include, for example, designing, collection of parts, plate working, casting, wiring and assembly. A simulation operation is firstly effected following this process. In the simulation, for

working stations, supplying to a computer work data produced from each work team which has started a simulation work based on the indication, storing the work data from each work team in the computer, 5 cumulatively adding the numerical data of all the stored work data developed in the same work team and re-storing the added data, preparing a simulation 10 work chart by printing out the added work data of the simulation works of work data tape representative of said simulation work, providing an output from a read out of said tape, comparing said output 15 from the read out with input data supplied to the computer and producing an output resulting from said comparison, using the output produced from said comparison to determine the required extent of 20 modification of said read-out-output, using said read-out output so modified to produce a practice work chart based on the simulation work chart, and effecting working operations at said working stations in accordance with said practice work chart 25 to produce said product.

2. A method according to Claim 1 in which indication for starting simulation work is given by operating a keyboard 30 having a plurality of key switches arranged

in a matrix array; to actuate a display board having a plurality of display windows arranged in a matrix array which corresponds to the matrix array of the key switches.

3. A method according to Claim 2 in which said simulation work chart and practice work chart each has a plurality of sections arranged in a matrix array which corresponds to the matrix array of the 40 display windows of said display board.

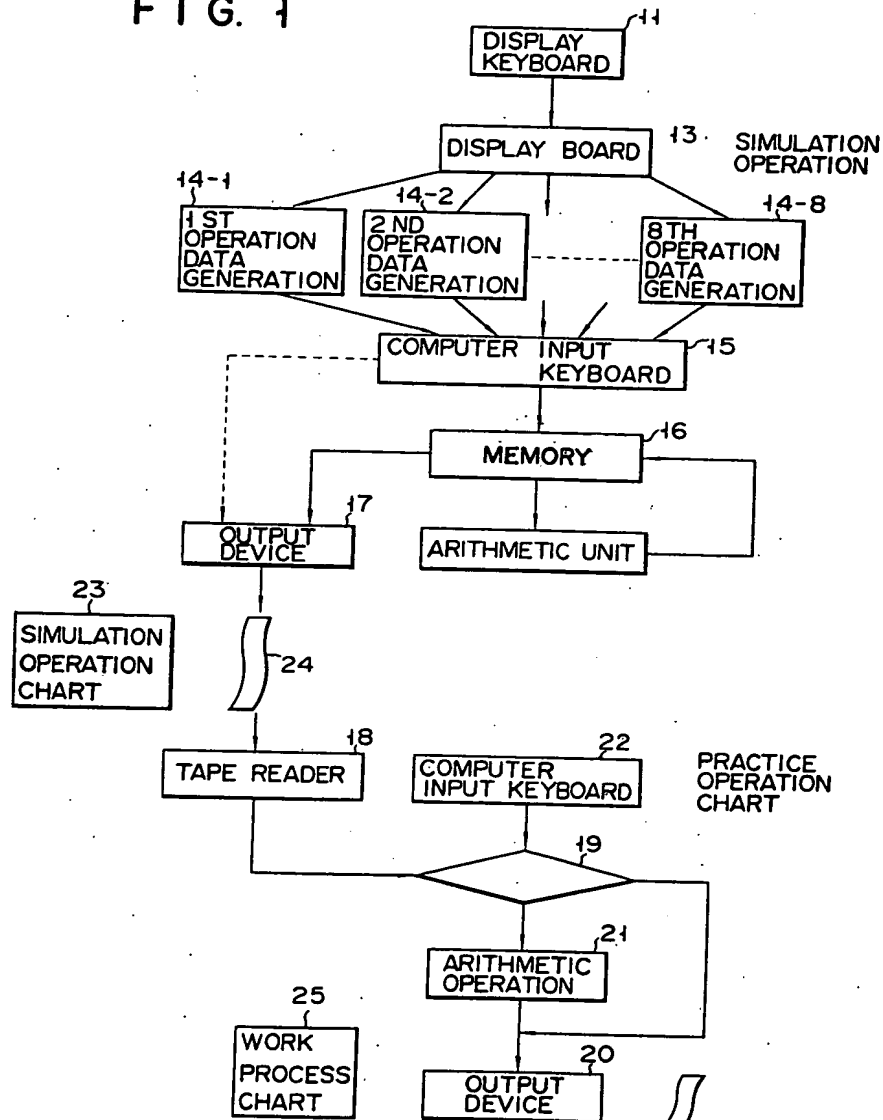
4. A method according to any one of Claims 1 to 3 in which first and second output devices respectively prepare said simulation and practice work charts 45 together with corresponding data tapes.

5. A method according to any one of the preceding claims in which said work data supplied to the computer includes the number of personnel, number of parts to be 50 used, work time and operation sequence.

6. A method of manufacturing a product, substantially as hereinbefore described with reference to the accompanying drawings.

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FIG. 1



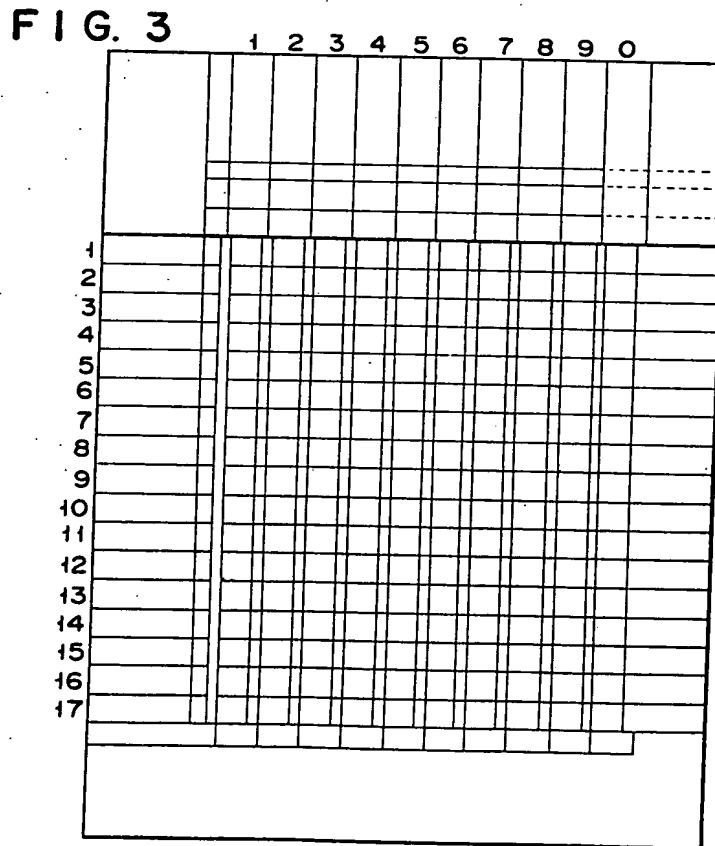
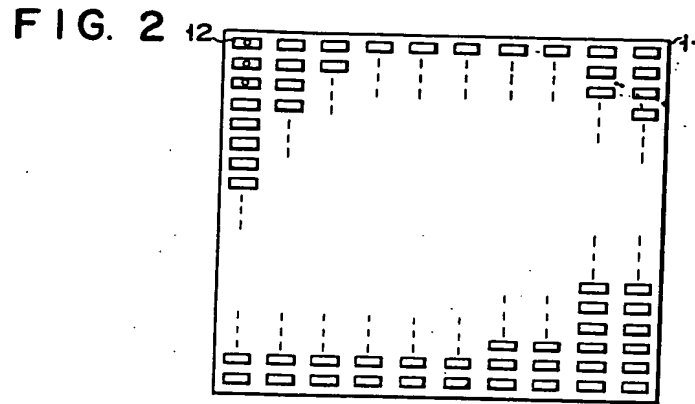
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COMPLETE SPECIFICATION

4 SHEETS

*This drawing is a reproduction of
the Original on a reduced scale*

Sheet 2



JOB NO	P. MOTOR NO	SHAFT A1	CUTTING	COARSE FINISH MACHINING	KEY WAY GRINDING	FINISHING	MILLING CUTTER	GRINDING BL	FINISHING	STOP ORDER NO	#
1										16641	16
2										16442	875
3										15443	1245
4										14144	45
5										95415	23.5
6										65416	55
7										13417	38

FIG. 4

FIG. 5

